

## Workplace: Six Sigma-sense

Enhanced performance: Companies that use the method for analyzing and fixing problems report marked improvement

By Rosemary Winters

They have been cloaked in mystery for more than a decade, sharing their black belt wisdom with only the most elite members of large and powerful organizations.

But now, the secrets of Six Sigma practitioners are exposed; the ability to strike a fast, forceful blow to stagnant business performance can be learned by everyone.

Since its development in the 1980s, Six Sigma has evolved from a tightly held set of principles applied to manufacturing processes to a widely available problem-solving methodology that can be used by all types and sizes of businesses, says Craig Gygi, co-author of *Six Sigma For Dummies* (\$21.99, Wiley Publishing). That his book, released earlier this year, exists at all is evidence of the changing nature of Six Sigma, he says.

The word "Sigma" is a statistical term that measures how far a given process deviates from perfection. The central idea behind Six Sigma is this: If you can measure how many defects there are in a process, you can systematically figure out how to eliminate them and get as close to "zero defects" as possible. Practitioners are categorized by expertise:



Craig Gygi, co-author of "Six Sigma for Dummies," strikes a karate pose to make a point during a presentation to employees at American Express earlier this month. The techniques now are becoming accessible to people outside Fortune 100 companies.

Beginner = yellow belt;  
intermediate = green belt;  
advanced = black belt; expert =  
master black belt.

Gygi, a Brigham Young University graduate, was a mechanical engineer at Motorola when the company first developed Six Sigma. After implementing the system, Motorola claims to have saved \$2.2 billion over a four-year period.

Motorola openly shared its newfound money saver, but high-price consultants monopolized the information. To learn Six Sigma at its most advanced level requires intensive training - typically offered as a four-week retreat that costs around \$15,000 per person. At that price, Gygi says, only Fortune 100 companies have invested in Six Sigma

training and only for the top 2 percent of their employees.

But the information is much more accessible now. People can teach themselves with books like *Six Sigma For Dummies* and *Six Sigma Simplified* and business schools are beginning to include courses on the subject. Gygi predicts this knowledge will become as essential as computer skills in landing a job.

"[Six Sigma] is going to be built right into the fabric of business," he says.

Jim Pappas, continuous improvement manager at the BD Medical plant in Sandy, has helped train more than 100 of the facility's 950 employees in Six Sigma. Engineers rely on the methodology to do their jobs and that has allowed the plant to continually increase its performance, he says.

For example, engineers implemented a Six Sigma

project five years ago to eliminate a recurring increase in scrap during the production of tips for IV catheters. By using Six Sigma to analyze the problem and set the parameters of the process, BD Medical has saved \$200,000 annually.

"Until we really understood what was happening, we couldn't fix the problem," Pappas says.

Two years ago, Gygi moved from Utah to Arizona to co-found Savvi International, a Six Sigma consulting firm with the goal of making the methodology accessible to workers at all levels and in all sizes of businesses. A company still may need only to train top engineers and computer scientists in black belt skills, but all employees can benefit from learning Six Sigma fundamentals, Gygi says.

Gygi was in Utah this month to speak to employees at the American Express Service

Center in West Valley. American Express, which first adopted Six Sigma in 1998, has plans to train a broad base of employees.

LoraLee Kodzo, a master black belt, directs Six Sigma training at the facility. She earned her belt in 2001 and saw an immediate difference in her work as a computer programmer.

"The changes I made were permanent - they were sustainable," she says. "Six Sigma helps you make decisions based on data instead of gut feeling."

Her only problem is explaining her statistical black belt. One time, she was referred by a friend to a job opening for a karate teacher.

"You get teased," she says. "People ask you about your martial art skills." ■

### Simply Six Sigma

- What is it? Six Sigma is a problem-solving methodology that uses mathematical models to identify and eliminate errors. The title itself refers to producing fewer than 3.4 errors per every 1 million opportunities to make errors. Supporters claim the process can improve business performance by 70 percent or more.
- How does it work? Employees with Six Sigma training use five fundamental steps: define, measure, analyze, improve and control (DMAIC). These steps can be simple or complicated depending on the scope of the project. Once the problem is accurately defined, the solution might be obvious. Or a Six Sigma-trained employee might use advanced statistical methods, such as factorial experiments, to correct the problem.
- Source: *Six Sigma For Dummies*